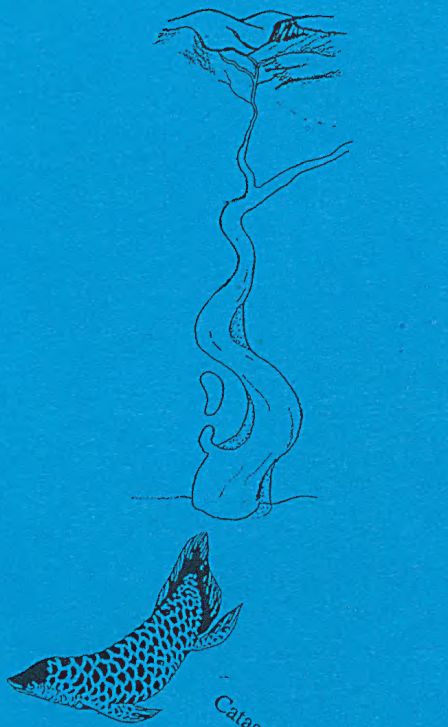
AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

NEWSLETTER



Catastrophic Drift of a Logo

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MEMBERSHIP DETAILS

The Australian Society for Limnology Inc. (ASL) is an association of over 500 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, government and private institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, filed excursions and social activities.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

Membership applications are welcome from any person with an interest in limnology. Five classes of membership are available:

Ordinary members	$ 30.00
Student members	$ 15.00
Life members	$ 250.00
Institutional members	$ 35.00
Sustaining members	Fee on application

Membership covers the period from 1 July to 30 June and all members receive the regular and occasional publications produced by the society. Members may also choose to receive the Australian Journal of Marine and Freshwater Research, the Australian Journal of Zoology and/or the Australian Journal of Botany at special reduced rates. The subscription of each journal is based don the calender year in which the subscription is paid.

Enquires relating to membership should be directed to the Membership Officer:

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Material for publication in the July 1994 Issue of the Newsletter should be sent to the editor (see back pages) before 30th June 1994.

Long articles should be forwarded as unformatted text, preferably on IBM-compatible discs, or as formatted text in any commonly used word processing package (Word or Word Perfect).

Cover: Logo drift..... a combined editors effort.

EDITORIAL

First, a big congratulations to the organisers of the West Australian conference - a great venue, well-planned and enjoyable break, and there was some good science there too. It is reassuring to see that the quality of student papers continues to rise and bodes well for the future of the Society. Which was a clever way to lead into talking about the future of the Society.

I spoke recently with El Presidento (Margaret Brock) about new initiatives in the ASL. Her first response was regarding the dress sense of the President. The President will now wear dresses in public as distinct from past presidents who have worn them in private (and of course, the past female presidents whose private lives are their concern). So, the image change begins at home!

Next, the serious bit. Hopefully, you have all sent back your details to Richard regarding your field of expertise (recall the bit about ASL as a "clearing house"). A Society like ours benefits from the wide range of expertise that it can draw on and it is essential that we can pass this expertise on to politicians and the media. Only when people in the street recognise the importance of what we are doing will they pressure politicians to support our efforts and improve the science of water management in Australia. Never before has the climate been so favourable for our opinions to be aired and this Newsletter is only one avenue.

Another way of airing your opinion is to attend conferences. Admittedly, some conferences are held at far off places but as the next one is to be held in Sydney, you have few excuses not to come and talk about your research and discuss your opinions with the Executive. In addition to conferences, there is a push for more local chapters to start forming. These provide a good forum for meeting a manageable number of people to discuss ideas and recent local results. Plus, many students are likely to join the Society if they can meet at a small informal gathering of a local chapter than at a big over-whelming meeting. Do encourage students to join ASL.

PRATTLEBUTT, SCUMOUR AND RUTTLE

NEW SOUTH WALES

The University of New England

From: Geoff Smith

In the Botany Department the new year saw the departure of Laurie O'Donnell from the biomanipulation of farm dams project. Though we still see him from time to time, his input to the group will be missed. Michelle Casanova has stepped into Laurie's waders since her PhD was accepted and she will have graduated by the time this gets printed.

Those who attended Rottnest may have heard Michelle's talk about the project. Mick Bales and Monika Muschal came up from Sydney to sample our farm dams for fish and invertebrates, displaying the spirit of co-operation between UNE and Water Resources. Mick, Monica, Michelle and Margaret Brock (M & M's) enjoyed a fruitful week of field work and discussion, and Michelle discovered the delights of fish sampling (weights, measures, and stomach pumps) and decided to stick with plants. The joys of invert and phytoplankton identification and counting await the workers in both institutions.

Margaret Brock continues her work on the endangered species committee (see article elsewhere in this letter) and the myriad of other projects. Natural Resources student Rowan Hutson has completed the summer Macquarie Marshes project and is now expanding it into an honours project. Now she knows lots about what will germinate from redgum and mixed marsh communities, Rowan is going back to collect samples to examine differences between seedbanks from disturbed and natural sites.

Welcome to the new kid on the block, Andrew Boulton who despite madly writing external notes for limnology in the Ecosystem Management Department, has already managed to get his feet wet in some of our diverse range of aquatic systems. Sandra Grinter arrived very recently to start her PhD on riparian zones and/or logging in streams. Other student projects underway and on the drawing board are the design of artificial wetlands (one for a university property and one for the fair city of Armidale), copper application to control blue greens and ways of controlling acidification in Lake Gudgeon.

Australian Water Technologies Science and Environment - Stream Studies Section

Yes, we are still beavering away and wondering how we are going to cope with all the new projects Bruce keeps applying for - keep yours eyes on the newspapers for jobs to be advertised in the next few months or write directly to Bruce if you are interested. Bruce recently went on a tour of South Africa and reckons the National Parks over there would be pretty neat places for fieldwork. Paul McEvoy, Ian Wright, Ruth O'Connor and Dave Holleley enjoyed the taxonomy workshop in Albury - good golf and lovely food served at just the right time!

Ian will have submitted his Masters thesis by the time this is published (oh yes you will, Ian) and will then take some long overdue holidays, leaving Julie Currey and Rod Hardwick to cope with the water chemistry and invertebrate work in the Blue Mountains.

Dianne Flett and Carla Kinross have extended their network of autosamplers to investigate water quality during flood events. Michelle Boyd has started fieldwork on the effects of agriculture on water quality. The main problem has been how to sample agricultural runoff in proportion to flow. Hugh Jones is analysing 3 years water quality monitoring data for the Lake Burragorang (Warragamba Dam) Catchment.

Paul, Adam Boey and Simon Williams are still sampling the Nepean River and tributaries. Ruth is in the middle of another macroinvertebrate and sediment survey - the Wollondilly catchment this time. While Maria Marzella has been visiting South America, Pete Swanson has been continuing to sample the horizontal and oft-constipated vertical-flow aquatic macrophyte treatment beds at Nth Katoomba STP. An enema is planned.

Amanda Kotlash is fighting with our you-beaut-specially-designed-database for macroinvertebrates in between relabelling our entire voucher collection. Jane Growns is trying to find time to finish a comparison of different rapid assessment sampling techniques and sorting out our mite vouchers.

We are sorely missing Jean Jackson who left us to return to the delights of Hobart. A final plea - please put everyone with invertebrate identification experience on performance enhancing drugs because we need more hands on deck.

The Murray-Darling Freshwater Research Centre

From : Rhonda Sinclair

On Monday 6 December staff at MDFRC received the sad news of Tony Watson's untimely death. Tony has been a great friend of the Centre and provided professional taxonomic expertise for dragonfly studies, nurturing our early taxonomic efforts and filling the role of mentor and ultimate arbiter as John Hawking's skills developed. This relationship proved a valuable model for other taxonomic work. We are very grateful for Tony's unstinting help and for his cheerful nature and occasional barbed but jocular grip. Our sympathy goes to his family, Barbara, Helen and Bill, and to Hilda Abbey who assisted him with his research for much of his career.

Paul Boon has resigned from MDFRC after seven years, to take up a Senior Lectureship at the Victoria University of Technology in Melbourne. We wish Paul every success in his new endeavour.

Congratulations to Russ Shiel who has been invited by the editorial panel of *Limnologica* (Berlin) to be on its Advisory Committee. He has also been invited to join the Editorial Committee for the Rotifera series of Guides to the Identification of the Microinvertebrates of the Continental Waters of the World (SPB Academic Publishing, The Hague).

In the latter part of December 1993, Paul Boon participated in a week-long excursion to the Flinders Ranges with staff from the University of Adelaide (Andrew Boulton and students), Monash University (Sam Lake), University of Barcelona and the State University of Arizona (Nancy Grimm, Stuart Fisher, et al.). The idea was to determine whether Australian arid-zone streams behave in a similar fashion to those in the USA and Spain; viz, there are active communities of nitrifying bacteria in the upper sections of stream sediments, which produce large amounts of nitrate as hyporheic water flows through the benthos. They do. The Ranges were, of course, visually stunning. The weather was also stunning; we experienced a Desert Storm which raised in our minds thoughts such as "what's it like to drown in our tents?" and "why did Andrew suggest we camp in the stream bed?" and "why didn't I spend more on a good tent that doesn't collapse at 3 am in the slightest breeze?" Medicinal amounts of Coopers Ale and fine Barossa shiraz eased our fears though.

Greg Raisin and Garth Watson attended the Freshwater Microbiota Workshop held at La Trobe University Albury-Wodonga Campus from Jan 17-21. The aim of the course was to acquaint the 19 participants (mostly research students and Government scientific officers) with the various groups of freshwater microbiota; namely algae, bacteria, rotifera, and microcrustacea. This was the summer school's 'first run' and we thank Roger Croome for a very enjoyable and well presented workshop. The school had its major focus around phytoplankton. Prof. Peter Tyler (Deakin Uni., Warrnambool) presented us with about eight lectures which covered the ultrastructure, function, nutritional modes and classification of the major groups of algae. Prof. Johanna Laybourn-Parry (La Trobe Uni., Bundoora) gave a similar but more condensed treatment of the protozoa. Russ Shiel and Paul Boon presented microcrustacea/rotifera and environmental microbiology respectively. Laboratory sessions were associated with

most of the lectures and it was an excellent opportunity to test our newly acquired "taxonomic prowess" (and have the experts on hand). Roger also spoke on the Gordon Lakes harking back to his PhD days. La Trobe plan to hold the School again in January 1995, most probably at the Albury-Wodonga campus.

On Saturday the 22 January, Terry Hillman and Daryl Nielsen ventured to Canberra for five days of thought provoking scientific discussion on the topic of CHIRONOMIDS, in the form of the 12th International Symposium of Chironomidae. The conference was attended by 54 people from 15 countries. Topics covered subjects such as molecular biology, abnormalities, biomonitoring, life histories and behaviour. They presented a poster on "Chironomid assemblages of ephemeral and permanent water bodies in a floodplain forest", based on data from Barmah Forest which appeared to be well received (well, at least no one fell on the floor convulsing with laughter).

Charles Sturt University, who are purchasing the AWDC building and the Peter Till Environmental Laboratory, are providing $1.4 million to extend the MDFRC. A preliminary estimate of Albury space needs is almost complete and planning will proceed. It is hoped to have the building finished by the end of the year.

Over 60 people attended the Sixth Taxonomic Workshop held at the MDFRC from 15 - 17 February. The attendants heard from Adrian Pinder (Museum of Victoria) on Oligochaeta and Peter Cranston (ANIC, CSIRO) on Chironomids. Adrian presented his key to the aquatic worms of Australia, which he co-authored with Dr Ralph Brinkhurst, who he has worked with for the past 12 months in America. Peter Cranston presented his key to the known chironomid larvae and pupae. John Hawking presented his key to identify all aquatic macroinvertebrates. The Taxonomic Workshops are attracting much interest with participants coming from as far away as Perth and Darwin.

QUEENSLAND

Paul Clayton is now working full-time on his thesis, moving out of the dunder and into the waterfalls. So in a state of wet season euphoria and forgetfulness about ones multitude of commitments, I agreed to replace Paul as correspondent.

Rivers and streams are flowing high in the north with the long awaited arrival of the summer rains . I dare not call it a wet season yet. The centre is a hive of activity bordering on frenzy as we all return from holidays to the ever looming deadlines, additional research projects and a reduced core staff to top it off. Morgan Thomas and Lee Benson have moved on, although Lee is still around, after hours, finalising his PhD. Niall Connollly has joined the centre and is mostly assisting Richard Pearson with Birthday Creek hydrology and disturbance research and with myself on a stream classification project. The latter covers streams throughout the Wet Tropics World Heritage area and is a continuation of work carried out by Roz St Clair when she was up here. (Hi Roz!). The first dry season survey was undertaken in December with many sites barely flowing or completely dry after an unusually long period without rain.

Andrew Sheldon has been very active, familiarising himself with tropical ecology. After the initial transition from North America, where taxonomy is so much more complete and Plecopterans abundant, he is now looking at the emergence activity, adult sex ratios and fecundity of a wide variety of stream insects.

The Burdekin Wetland Classification project has entered the final labour stages with multivariate contractions (and expansions) causing complications. Meanwhile the wetlands are ever changing as the farm development expands rapidly throughout North Queensland.

In light of this, a workshop has been planned by the ACTFR to address landscape ecology issues in areas of irrigation development, specifically involving managers and farmers. A date is still to be finalised.

VICTORIA

La Trobe Uni. (Albury-Wodonga)

Gerry Closs has started his study of fish community dynamics in streams around Burrowa-Pine National Park. Electrofishing in the mid-semester break yielded abundant two-spined blackfish, galaxiids and a few trout. Murray crays were also abundant, anyone want to do a postgrad project on them? - lots of potential. Michael Shirley is finalising study sites for his ecology of redfin study. Recent mesh netting of a local billabong resulted in a spectacular catch of European Carp plus redfin - anyone got any good recipes? Darren Ferrier has commenced his honours project (supervised by Roger Croome and Johanna Laybourn-Parry from La Trobe - Bundoora on zooplankton-protozoa-phytoplankton-bacteria interactions in Lake Dartmouth, Lake Hume and a local billabong. Bugs galore in his first samples. Susan Lawler and Keith Crandall (Uni of Texas) attended the International Astacology conference in Adelaide in April and managed to find time to catch specimens of Euastacus and Geocarax in the Otways for molecular studies.

La Trobe - Bundoora

Several watery honours and postgraduate projects are underway at Bundoora. Steve Balcome is studying fish assemblages in the Broken River, catching river blackfish, galaxiids and mosquitofish. Felicty Smith is working on the dynamics of community reassembly in 20 experimental temporary ponds. Alastair Cameron is finishing off his masters research on the effects of salinity on the Kerang Lakes wetlands.

Museum of Victoria

Adrian Pinder is continuing his work on the taxonomy of Oligochaetes and should be at the Museum until the end of the year. Richard Marchant is developing two CRC funded projects, the first on the multivariate analysis of stream communities with Richard Norris, the second with Sam Lake and Barbara Downes using stream channels. Barbara, Sam and Richard are currently scouring the central highlands area for suitable yobbo-proof sites for the channels.

Victoria University of Technology

Paul Boon has started work as a senior lecturer at VUT. Working frantically at writing lectures, continuing existing research, and doing it all with flair and a smile! Paul, Nick O'Connor and Paul Lam, whilst not developing new courses, are finalising plans for a wet lab at VUT.

Melbourne Water

Susie Moore is to join Peter Breen's team at Melbourne Water as a postdoc on a CRC funded urban stream project. Susie is a wetland/waterbird ecologist, and will examine the effects of increasing habitat heterogeneity on stream community structure.

TASMANIA

Inland Fisheries Commission :

From:: Paul Humphries

Laurie Cook, who is at this very moment probably encouraging some brightly coloured matador to finish off a poor, defenceless bull, has resigned from the IFC and will be going to join the ever expanding empire of Freshwater Systems (ask Peter Davies). The HEC consultancy has received confirmation of funding for another three years and so will continue to pursue their aims of investigating water quality and other issues in hydro storages and related environments. The Mercury study mentioned in the last instalment has been extended statewide and will involve eels and trout. The Swan Galaxias recovery plan has been written and is being put into action.

No Pedder Galaxias have as yet been sighted in their new lacustrine home. Recently, several IFC employees incurred the wrath of bushwalkers when they were marooned overnight by bad weather next to a lovely picturesque lake and were forced to rub body parts vigorously together and burn parts of the chopper to stay warm. An assessment of the new reserve system for *Anastacopsis gouldi* is currently being carried out via a string survey. This involves floating down rivers, playing violins and cellos until the crayfish are so stressed that they emerge with claws clasped tightly over their auditory whatevers, screaming "Enough, enough!!"

The instream flow project has recently employed BIG Dave Cook to help with field and lab work for a few months. He is also helping out the HEC group. Dave recently completed Honours at the Uni. of Tas, looking at movement of *Galaxias truttaceus* in a small stream. He tells me that one of his aims was to "Prove the bastard Humphries wrong", which to all accounts he did admirably. However, after cleaning out IFC toilets for two weeks, he has for some strange reason recanted and is now towing the line nicely.

Tasmania recently had a visit from Drs Tesch and Weber, two European eel experts who regaled us with tales of eel migration and aspects of the European commercial eel fishery. Thanks 'Big T' and 'Big W.

University of Tasmania

From: Lean Barmuta

Edwin 'Big Ed' Chester and Dave Oldmeadow are currently working on Leon's ARC funded project on habitat patchiness and flow regimes and experiencing the delights working downstream of bridgeworks. Belinda Robson finished her summer experiments just in time to avoid the big Christmas floods (thanks a million Santa!) and is spending her waking hours staring blankly at her data and wondering what it all means. Rob Walsh has joined the Zoo. Dept and is doing a PhD looking at zooplankton of coastal lagoons. He is jointly supervised by Drs Tyler, Richardson and Shiel. Finally Martin Reed, late of QLD, has commenced a LWRRDC scholarshipped PhD,

investigating the many and varied effects of willows on instream fauna (things with vertebrae and things without).

NORTHERN TERRITORY

From: Michael Douglas

Things are getting busy in the NT at the moment as everyone rushes to get that last bit of field work completed before the end of the Wet. At Kapalga research station, the creeks are rapidly drying out and the end of my last season of fieldwork is just weeks away! Sadly, this will also be the last year that CSIRO will be carrying out controlled burning for the Kapalga Fire and Water Project.

Sam Lake and Richard (Super Lara) Marchant flew in to pay their last respects to Kapalga and just for something completely different, spent a few days playing with bricks in streams. Highlights of their visit included the annual barra fishing/riparian re-decoration ritual, a lunchtime lecture from the Palmerston branch of Sisters of Satan and a discovery of the Joy of Flourescene.

At NTU, Keith McGuinness has seen the light and emerged from the mangroves to supervise a project in freshwater ecology. Karen Coombes will be carrying out an Honours project studying the population dynamics and ecology of a suite of aytid species in streams of the Darwin region. Results from a pilot study look promising, with plenty of shrimps available and some interesting patterns in species distributions. Karen hopes to conduct experiments to investigate the habitat preferences of the four species.

Water Resources Division, NT Power and Water Authority

From: Simon Townsend

Trudi Hotzel from the Albury-Wodonga Campus of La Trobe University paid a visit to Water Resources Division on her way to Kununurra in March. Trudi was hosted by Simon Townsend and Roslyn Guy who gave her a guided tour of Darwin River reservoir, Darwin's oligotrophic potable water supply. The great diversity of desmids and other green alga was a welcome contrast to the algae typical of the eutrophic waters Trudi usually works on.

Environment Division, Dept. of Mines and Energy

From: Barry Noller

The Environmental Division of the NT DME is emerging from the annual wet season which has proved to be routine. Continuous monitoring techniques have been applied to monitor released waters at various mine sites and the results are currently being evaluated.

Case studies on the efficiency of wetland areas to remove excess water from the mine dewatering at Woodcutters mine near Darwin and at Ranger (for uranium retention) are continuing.

During 1993 a study was undertaken to review water related environmental issues at Groote Eylandt and a report has been published. Water quality data from water samples taken in the mine area of GEMCo and from sites in the "Eastern Leases" were examined. It was recommended that the existing monitoring program could be reduced. Pre-mining assessment and careful environmental protection measures will be required to ensure protection of environmental values in the catchments where the Eastern Leases are located. This will particularly involve assessment of the groundwater system in the catchments including development of a predictive groundwater model to ensure that spring-fed forest areas are protected.

Office of the Supervising Scientist

From: Peter Dostine

There have been some dramatic changes to the administrative arrangements under which ARRRI operates. The OSS has been incorporated into CEPA. The head of CEPA, Mr Barry Carbon has been appointed as the new Supervising Scientist. Changes to the structure of ARRRI following the recommendations of the recent review are awaited with much interest by all concerned. Meanwhile, the Biological Monitoring section continues to function like a well-oiled machine.

The benthic invertebrate program in Magela Creek has been modified according to suggestions from the ARRRI Monitoring workshop. The community-based BACIP design has been replaced by a community-based asymmetrical beyond BACIP design with complex interactions. Sampling is progressing well, despite occasional interruptions from post-monsoonal storm activity.

Peter Dostine attended the most recent taxonomic workshop held at MDFRC. Adrian Pinder and Peter Cranston both held an appreciative audience in a carefully woven net of suspense. I now realise that oligochaete identification is not too arcane - but I'm sure I'll think of another excuse. Both presenters did an excellent job. After the workshop Peter Dostine spent a few days discussing odonate larvae with John Hawking.

Recent visitors to ARRRI include Sam Lake and Richard Marchent - both in the NT to ensure that student Michael Douglas stays on the path of righteousness, and to assist with sampling on the effect of forest burning regime on stream communities at Kapalga. Anticipated visitors to ARRRI include Winston Ponder from the Australian Museum - here to pursue gastropods and phreatoicid isopods, and Tom Weir from CSIRO ANIC will be spending some time in ARR collecting gerromorph hemiptera.

Honours student Michael Smith (ANU) received First Class Honours for his project on recovery of invertebrate communities in a stream receiving acidic mice drainage. Well done Michael. In recognition of his abilities to conduct sampling programs in remote and hazardous environmental, Michael is now involved in Monitoring River Health in the Kimberly and Pilbara Regions of WA.

PAPUA NEW GUINEA

Correspondent: Ian Roderick, Environment Department, Ok Tedi Mining Limited, P.O.Box 1, Tabubil, Western Province, P.N.G.

Since my last report, the wet season has arrived with a vengeance accompanied by a substantial rise in the Fly River level. Fortunately the drought broke before Christmas, which allowed the shipments of Christmas goodies to get through to Tabubil. Once again the supermarket shelves are stocked up and the bottle shops full of wine and beer.

Since November there has been little in the way of field work in the Biology section. During the dry period, many sites could not be sampled due to there being little or no water in most of the off river water bodies. In addition, for several months no sampling has been possible at any of the sites in the vicinity of the Fly/Strickland River junction, because of an on-going dispute with the land-owners over compensation demands. This has resulted in a bit of a gap in our database, however, it appears that the problem is close to being resolved. The first post-drought sampling of the off river water bodies in the Bosset region will be conducted during February, so it will be interesting to see how the lacustrine fish faunas have recovered. The lull in field work has given us a chance to catch up on some office and laboratory work, as well as getting the Annual report under control.

Monica Rau has officially joined us now after settling into the Tabubil way of life and sorting out baby-sitting arrangements etc. Kayeman Bakowa will be returning to work during mid-February following completion of a year in Townsville studying for a Graduate Diploma at James Cook University. Ross Smith will also be paying us another visit during February for a couple of weeks as a consultant from BHP Engineering, Sydney. It seems like he just can't keep away from Tabubil. No doubt he has designs on sneaking in a spot of Black Bass and Barramundi fishing. Andrew Storey and Boga Figa are currently attending the A.S.L. conference on Rottnest Island and no doubt many of you will have met them by the time you read this.

WESTERN AUSTRALIA

School of Environmental Biology, Curtin University of Technology

From: Dr Jacob John

Although aquatic research workers at the School of Environmental Biology, Curtin University of Technology have been involved in several research programs on wetlands of Western Australia for the past several years, they have been initiated into the ASL only recently with the participation in the ASL Congress at Rottnest Island.

Mr Stuart Helleren completed a Masters degree in Natural Resources after three years research work on the diatom assemblages of the Swan Coastal Plain under Jacob's supervision. Stuart has been appointed as a Research Officer to work on the coastal

phytoplankton research project by Jacob for the Environmental Protection Authority of Western Australia.

Ms Michelle Handley has been working for Western Mining Corporation, Kambalda during the vacation as well as collecting data for her Masters thesis on the limnology of Kambalda salt lakes. Another project on applied limnology at the RGC Mineral Sands mine site at Capel is being completed by Ms Kylie Ashenbrenner on the role of aquatic microbial communities. She has been busy writing up her thesis. Both are applied limnology projects supervised by Jacob.

Other research activities under Jacob's supervision included an Honours program on blue green algal blooms of the Swan Coastal Plain by Harry Hoareau and diatom assemblages as indicators of salinisation in the Avon River by Glenn Hanna.

With blue green algae "blooming" everywhere, Jacob has been extremely busy with several collaborative research programs with the Waterways Commission involving postgraduate students.

Another exciting development has been the Dawsville Channel which is due to open in April and will hopefully flush out all the blue green algal problems of Peel-Harvey Estuary into the sea. Stephen Chase, one of Jacob's Honours students, has been involved in monitoring the effect of the Dawsville Channel on the phytoplankton. Stephen has been collecting phytoplankton from the Peel-Harvey estuary and eagerly waiting for the Channel to open to continue his Honours program and currently employed by Peel Inlet Management Authority.

Jacob and several enthusiastic algologists with special interest in diatoms have formed the Australasian Society for Diatom Research. Anyone interested in joining the Society is welcome to do so. Just write to Jacob. You will receive your first newsletter of the Society.

Department of Conservation and Land Management

From: Stuart Halse

The Monitoring River Health Initiative has got underway in Western Australia. It is coordinated by CALM with the fieldwork being divided between CALM, Edith Cowan University, Murdoch University and the University of Western Australia. The States river systems have been divided between the various participants. Michael Smith is coming from Canberra in mid-April where he has been working with Peter Cranston, to coordinate the efforts of the researchers and do the CALM share of the fieldwork.

Water Authority of Western Australia

From: Shirley Balla

Luke Pen recently joined the Strategic Planning section of WAWA after leaving the Waterways Commission in Albany. He is currently undergoing the mental readjustment required when working in a building of 2000 engineers. A National Landcare program on nutrient stripping in the Peel main drain is getting underway with Jane Chambers (Murdoch University), Ross George (Department of Agriculture) and various WAWA people. Piers Goodman is leaving the Environmental Management section of WAWA for a position in DOE. What is DOE I hear you cry ? It is the Department of Environment - a renamed EPA. The last name change was in the mid eighties and is basically the Liberal Government making its mark (note: DOE doesn't mention protection or conservation).

Shirley has plenty of copies of "Wetlands of the Swan Coastal Plains Volume 4: The effects of altered water regimes on wetland plants" left to sell for the staggeringly low price of $15.00 each. "Don't send any money she will bill you". Write to Shirley Balla, Groundwater and Environment, Water Authority of WA, P.O. Box 100, Leederville, WA 6007.

Edith Cowan University

From: Mark Lund

Things are all go here with Darren Ryder about to start his Ph.D. with Pierre. He is currently wandering around trying to find a decent desk and should be wearing a T-shirt with "I am not a nobody, I am a Ph.D. student" on it. I have a honours student from Technology studies (Steve Prezet) who is looking at the commercial feasibility of rearing Chironomids for the aquarium industry. To avid readers of the ASL newsletter this may sound vaguely familiar. I actually did a brief study into this in 1989 and Steve will be hopefully taking it much further and will also explore the business side of it. I presented a talk at Shirleys WAWA seminar series on Lake restoration (case study of Lake Monger), the content of which seemed to nicely irritate Pierre.

Speaking of Pierre Horriblewitz, while he is not around to defend himself, I will briefly mention what he is upto. He is trying to wind up the Heritage Commission work on the peatlands of the south-west. He is about to start finding sites for the monitoring of river health that Stuart mentioned earlier. He found a new genus of frog at one of his peat swamps which apparently has frog experts very excited. Interestingly following an article in the West Australian newspaper on the frog, people rang up from all over the state claiming to have found the frog in their backyards. We will hopefully hear more about the frog in the next issue.

Finally apologies to any W.A. groups that didn't fax me back in time.

SOUTH AUSTRALIA

State Water Laboratory, Engineering and Water Supply Department, Adelaide

From Peter Goonan

Phil Suter has left the State Water Laboratory to take up the position of aquatic biologist with the SA Environmental Protection Authority. Dennis Steffenson, Mike Burch and Peter Baker have been busy preparing for the blue-green toxins workshop, sponsored jointly by the American Water and Wastewater Association Research Foundation and the Australian Centre for Water Quality Research, in Adelaide on the 23-26 March 1994. Experts in blue-green algae from North America, UK, Europe, Japan, China, Scandinavia, South Africa and Australia will be attending the workshop with the objective of identifying drinking water issues and research priorities regarding algal toxins.

The University of Adelaide

Flinders Ranges Group

Only a small band of researchers remain after the departure (desertion?) of Andrew Boulton and Sandra Grinter to UNE. Leanne Piller is analysing data and writing up her honour's thesis on the relative importance of top-down (Tadpole grazing) and bottom-up (nutrient availability) control of periphyton communities in Flinders streams. Peter Schultz is looking at temporal and longitudinal changes in invertebrate and algal community structure in springs and Sam Wade is continuing work on hyporheic exchange and finding excuses not to count bugs from his road crossing study.

River Murray Laboratory

Keith Walker has launched yet again into a semester of teaching Research Methods in Zoology, but without the added task of coordinating Honours students. Prof. Bill Williams has relinquished the reins as Head of the Zoology Dept and is enjoying a less administrative role presently. Brenton Zampatti reeled in a big First Class for his Honours project on "Toxicity of Cyanobacteria to fish" supervised by Keith. Brenton is now working for at the State Water Lab in Melbourne. We are going to have to stop this migration of SA success stories to Vic; the Grand Prix, Brenton . . . Liz Larwood successfully finished her Honours on "Ecology of biting midges at Loxton, SA" with Keith and has caught 'terrestrialitis' (rumoured to be almost as bad as moving to Victoria), having taken a job with the SA Dept of Agriculture examining agricultural things.

The lab is brimming with activity as snails are plucked from irrigation pipes, carp are caught, periphyton is scoured and macrophyte experiments are planned. New Honours student Marcus Wishart is studying the influence of food quality (C:N) on the growth

and fecundity of the freshwater snail *Notopala hanleyi* and the role it has in its disappearance from the Murray. Marcus' project stems from investigations carried out by Fran Sheldon (of recent *Quantum* fame) during her PhD and may provide a greater understanding of why this species has (most likely) disappeared from the Murray. On a more serious note, 'Villizi fever' has hit Murray carp populations. Sudden disappearances, whole metapopulations decimated, tails of unspeakable dissections (pun intended) . . . . Carp dive for shelter as Lorenzo arrives unannounced at a sleepy backwater and casts his infamous gill net. No carp knows who will be next!! Lorenzo has made great progress in age determination of carp using otilith studies, and soon plans to verify his results with electrophoretic studies. Lorenzo 'Carp Terminator' Vilizzi - he'll be back.

Adrienne Burns continues her studies on periphyton community structure in variable water level and light regimes in the Murray. She has also commenced a grazing trial involving the omnivorous freshwater crustacea *Macrobrachium* and *Paratya* feeding on attached assemblages of red gum wood. She is using 44 plastic kitchen colanders as grazing exclosures, despite our best attempts to convince her that no self-respecting spaghetti would even think of eating algae!

Adrienne and I are planning field experiments examining respectively community changes in periphyton and growth responses of macrophytes in stable and variable water regimes. The submersed aquatic *Vallisneria gigantea* has a distribution roughly defined by water regime in the Lower Murray. My experiments aim to test the hypothesis that water regime is largely responsible in determining this species' distribution. Adrienne will study the effects of flooding and drying versus continuous inundation on periphyton communities grown on redgum substrata

Fran Sheldon has recently submitted the PhD thesis on "Ecology of Littoral Zones in the Regulated Lower Murray". Congratulations to Fran on landing a half time lectureship in third year Freshwater Ecosystems in the Zoology Department. Fran was last seen enthusiastically preparing lectures, exciting practicals and exotic field trips. (and this explains the late completion of this Newsletter - Ed).

Salt Lake Group

Despite being on sabbatical this year Bill Williams is managing to keep busy. On 23/4 he is holding a dinner in honour of Gene Likens. This means that he was under strict observation at home over Easter doing all the odd jobs that have escaped his attention over the past few years. Good to see he knows who is in charge! In February he was in Japan with the ILEC and helping to organise the next World Lake congress. He stopped in Hong Kong on the way home to visit his old mate David Dudgeon. In April he is going to a conference in Uzbekistan that is being organised and funded by NATO. On the way home he will be visiting Lake Sambar, the largest and most important salt lake in India. Bill is also vice chairman of the scientific committee at the next international symposium on salt lakes in China in July. In his spare time a new edition of Australian Freshwater Life is on the drawing board plus various other papers and projects.

Fereshteh Ghassemzadeh (Angel for short) has recently started a Ph.D. with Bill working on the biology and chemistry of solar salt ponds at Dry Creek just north of Adelaide. Angel is from Iran where she completed her B.Sc. at Mashhad University. She has a M.Sc. in environmental science from the University of Okalahoma and a scholarship from the Iranian government to enable her to work towards her Ph.D.

"Oh, there goes Lenny again — draining off the goldfish bowl. ... He wants to one day work for the Army Corps of Engineers, you know."

LETTERS TO THE EDITOR

A minor typographical glitch that you might like to set right in the next newsletter.- No! Not the 'National Party and Nature Conservation Authority' (page 17 of the last issue) - I chair the National Parks and Nature Conservation Authority. This is a statutory body in which national parks, nature reserves, marine parks and marine nature reserves are vested in this State; the Department of Conservation and Land Management manages these lands (and waters) on our behalf.

A.J. McComb (Professor of Environmental Sciences - Murdoch University).

OBITUARY

JOHN ANTHONY LINTHORNE WATSON

Born 20th September 1935; died 4 December 1993

On the 4 December 1993 Dr J.A.L. (Tony) Watson died in Canberra and Australia lost an insect specialist of world repute. Tony specialised in the ecology and taxonomy of termites, dragonflies and silverfish.

Tony was born in Nedlands, Perth, Western Australia, where he spent his early life and completed his formal education. He excelled at tennis and played competition grade. He attained entrance to the University of Western Australia, completing a Zoology degree with first class honours. His honours project was on the Odonata of south-western Australia, of which part was later published by the Western Australian Naturalists Club as a handbook, The dragonflies of south-western Australia.

In 1958 Tony gained a Hackett overseas scholarship which enabled him to undertake a PhD at Cambridge. He completed his PhD in 1962 on the "Endocrinology, reproduction and development of silverfish". He moved to the United States where he continued his research on silverfish at Case Western University, Cleveland, Ohio. He returned to Perth in 1965 and in 1966 joined the Division of Entomology as a Queen Elizabeth Fellow continuing his research on silverfish. In 1967 Tony was appointed to CSIRO, replacing Tom Greaves in the Termite Section and becoming the groups leader in 1970.

Tony's major field of research involved termites, on which he published 69 papers, dealing with their taxonomy and ecology. His most memorable publications are the handbook on Termites of the Canberra Region and The Atlas of Australian Termites.

Tony also continued his interest in dragonflies, mainly in his own time and at his own expense. He produced 61 papers on their taxonomy and ecology. Possibly his greatest contribution was the publication of The Australian Dragonflies, a comprehensive handbook on Australian dragonflies. His other notable publications were the chapters on Odonata in The Insects of Australia and The Zoological Catalogue, and the major revisions of the families Protoneuridae and Gomphidae, and the subfamily Gomphomacromiinae (Corduliidae).

Tony was also involved in writing three other chapters in The Insects of Australia; Archaeognatha, Thysanura and Isoptera. He also co-authored seven papers on other insects, from beetles associated with termites, to the ecology of silverfish.

Tony was awarded the Australian Entomology Society's inaugural Ian Mackerras Medal for excellence in entomology in 1984, and was elected a member of honour of the Societas Internationalis Odonatologica in 1989.

He is survived by his wife, Barbara, and two children, Helen and Bill.

John Hawking

60 MINUTES

EXECUTIVE MEETING, ROTTNEST ISLAND WA, 31/1/1994

Present: M.Barson, P.Boon, R.Marchant, L.Barmuta, M.Brock, M.Lund, A.Boulton.

1. Finances: the treasurer sent a statement (via the secretary) projecting expenditure and receipts for the next financial year. The main point to note was that receipts and proposed expenditure more or less balanced, leaving no surplus. Thus extra expenditure, e.g. for special publications, would have to come from the society's reserves. There was some discussion about when the next annual subscriptions were due. The secretary thought these would be sent soon (within the next month) but will confirm this with the treasurer.

2. ASL logo: the secretary submitted some designs for a logo drawn by a graphic design student (L.Flood). The executive approved the design but decided the members should be given the chance to express an opinion at the AGM. If approved at the AGM the secretary would ask L.Flood to arrange the logo on A4 paper with the words "limnology is the study of inland waters" at the bottom of the page. This could then be copied and sent to executive members for their use.

3. FASTS: the president wrote to the executive director of FASTS (D.Widdup) inviting him to an AGM but received no reply. It seems the letter never reached Widdup; the president will write again.

4. The president received a letter from M.Blakers, the chairperson of an international ornithological association, that wants to set up a biodiversity council to lobby for money for research and conservation. Blakers was seeking the ASL's support for this initiative but was not asking for financial support from the society. The executive decided to seek the authorisation of the AGM before proceeding with this.

5. Endangered species: M.Brock noted that the society needs to be more aware of endangered species legislation and that the society should propose species and habitats for protection. She will write a note about this matter for the newsletter.

6. List of experts: When more names have been added to this list, which was advertised in the last newsletter, the list will be circulated to the executive. It was felt, however, that an executive member should co-ordinate this initiative and generally assist with "public relations". This matter was left to the incoming executive.

7. Newsletter editors: A.Boulton and F.Sheldon will become joint editors assisted by their colleagues at the University of Adelaide Zoology and Botany Departments.

ANNUAL GENERAL MEETING OF THE ASL, ROTTNEST ISLAND WA, 1/2/94

Meeting started at 4.30pm (p=proposed, s=seconded)

1. Adoption of the agenda: passed (p=K.Trayler, s=T.Doeg).

2. Apologies: T.Hillman, J.Imberger, R.Tilzey, S.Bunn, P.Davies, I.Potter, D.Mitchell, K.Walker, R.Pearson, P.S.Lake, B.Hart.

3. Acceptance of last AGM minutes: passed (p=R.Marchant, s=L.Barmuta).

4. Matters arising:
(a) the society has been in contact with FASTS and will bring a recommendation to next year's AGM;
(b) the annual subscriptions were raised last year;
(c) the changes to the constitution voted on at last year's AGM and those that went to a postal ballot were all passed and have now been incorporated into the constitution;
(d) a subscription to AJMFR donated by CSIRO will become the prize for the best honours presentation;
(e) the proposal to produce a book on Australian limnology for the SIL congress in the year 2001 (if the congress is to be held in Australia) was discussed by the executive. They felt that a special issue of AJMFR was justified but a book was not;
(f) the suggestion to give a prize for art-work was also discussed by the executive. After consultation with other societies who have held such competitions it was felt that such a contest would bring too many difficulties. The executive still encourages members to submit art-work for the newsletter.

5. President's report: the president thanked the organising committee of the current congress and hoped that such joint congresses would continue. As ASL congresses seem to be attracting more participants each year the president suggested that future organisers should plan for longer meetings. He then outlined some of the actions taken since the last AGM to increase the political profile of the society. He stressed that the society did not intend to become a "freshwater ACF". The various actions included:
(a) drawing up a list of experts on various limnological topics;
(b) encouraging the formation of working groups that might keep a watching brief on important issues. He informed members that the society had been approached by an ornithological group (chairperson M.Blakers) that wanted to form a biodiversity council to lobby for funds for conservation and research. The ASL had been asked to provide scientific input to this council. Finally, he noted with sadness the recent death of Dr Tony Watson, who had made a very significant contribution to freshwater science through his work on the systematics of Australian Odonata. Report accepted (p=M.Brock, s=T.Entwistle).

6. Secretary's report: the secretary, as usual, had dealt with mostly routine correspondence since the last AGM. However, two items were worth mentioning. These were the requests for donations from the organisers of the Australian Biology Olympiad team and the chairman of the International Commission for Zoological Nomenclature. The executive had decided to send $150 to each of these bodies; and would consider future requests favourably but could not commit the society in advance to such expenditure. Donations would depend on prevailing circumstances. Report accepted (p=A.McComb, s=J.Hawking).

7. Treasurer/ membership officer's report: this is attached to these minutes. Accepted (p=J.Davis, s=M.Barson).

8. Honorarium for treasurer: an amount of $1000 was passed. (p=R.Marchant s=G.Ganf).

9. Auditors' report (attached): this was read out to members by the secretary and accepted (p=K.Trayler, s=A.Pinder).

10. Editor's report: no report was given because S.Bunn was absent.

11. Newsletter editor's report (by A.Boulton):
(a) a new editorial group had taken charge consisting of A.Boulton, F.Sheldon and colleagues from the Botany and Zoology Departments of the University of Adelaide;
(b) a wrapper rather than an envelope was being used for postage as this saved money;
(c) A.Boulton will continue as a co-editor when he moves to the University of New England;
(d) state representatives were thanked for the news they contributed;
(e) a 'letters to the editor' section will be started as will a section devoted to current items of limnological interest. Contributions by e-mail would be especially welcome.
Accepted (p=T.Doeg s=L.Barmuta).

12. Report of Jolly award committee (by A.McComb): no award was made this year and very few nominations have been received in recent years. Accepted (p=P.Horwitz, s=J.Davis).

13. Report of student awards committee (by A.Boulton):
(a) best poster: E.Fairhurst (BES, Murdoch);
(b) best honours presentation: S.Wade (Zoology, Adelaide);
(c) best Ph.D presentation: F.Sheldon (Zoology, Adelaide).
Accepted (p=A.Storey, s=P.Bailey).

14. Student travel awards: the secretary reported that 7 students had been subsidised by the society to attend the 1994 congress: N.Cubberley, R.Sharma, S.Blanch, F.Sheldon, S.Wade, M.Cooling, J.Marshall. Accepted (p=K.Trayler, s=M.Barson).

15. Door prize award (by T.Doeg): Although there were a number of worthy nominations this year (at last after some 'dry' years) the winner was R.Doupé (Edith Cowan) who chose to sleep outdoors and was awoken in the morning by a sprinkler spraying treated sewage.

16. 34th congress: B.Chessman has offered to host this somewhere near Sydney.

17. Future congresses: Warnambool or somewhere in South Australia were suggested.

18. Election of executive: (the following were elected unopposed)
President - M.Brock (p=R.Marchant, s=L.Barmuta)
Vice president - P.Boon (p=M.Barson, s=M.Brock)
Secretary - R.Marchant (p=L.Barmuta, s=T.Doeg)
Treasurer - M.Hart (p=R.Marchant, s=J.Hawking)

State representatives:
Vic - G.Closs (p=J.Hawking, s=T.Entwistle)
NSW - J.Growns (p=M.Brock, s=J.Davis)
Qld - R.Congdon (chosen by executive after AGM)
NT - M.Douglas (p=L.Barmuta, s=M.Brock)
Tas - P.Humphries (p=P.Horwitz, s=T.Doeg)
WA - M.Lund (p=K.Trayler, s=J.Latchford)
SA - S.Blanch (p=A.Boulton, s=S.Wade)
ACT - M.Barson (p=I.Webster, s=L.Barmuta)

19. Election of auditors: Coster Galgut Pty Ltd were re-elected (p=L.Barmuta, s=R.Marchant).

20. General business:
(a) A.McComb announced that an INTECOL wetlands congress will be held in Perth in 1996. He hoped ASL could be a formal sponsor of this meeting.
(b) The Jolly award address which was to be given this year by the last recipient, K.Walker, will now be given next year.
(c) A possible logo for the society was shown to the members. This logo had been approved by the outgoing executive and members attending the AGM had no major objections to it. The designer will be asked to place it on A4 for use as a letter-head.
(d) Long term sites for limnological work: the executive will try to form a group to assist such an initiative.
(e) Activities committee report (by J.Latchford):
(i) Bike tour - a calendar was presented to A.Grant for finishing the course.
(ii) Beach activities - the combined Qld & NT team won the competition; a special prize was presented to the NSW team.
(iii) Special thanks was given to K.Trayler for organising the wine for the congress.

Meeting closed at 6pm
R.Marchant, Secretary

EXECUTIVE MEETING, ROTTNEST ISLAND WA, 1/2/94

Present: R.Marchant, L.Barmuta, M.Brock, S.Blanch, M.Barson, P.Boon, P.Humphries.

1. Public affairs officer: M.Barson agreed to take on this position. The secretary will send her the list of nominated experts for possible use by ministerial advisers in Canberra. The list will also be published in the newsletter. (The deadline for the next newsletter is 15/3/94).

2. L.Barmuta (the immediate past president) will send M.Brock details about the FASTS correspondence so that communication with this organisation can continue.

3. Biodiversity council: (organised by ornithologists) the ASL will nominate some executive members that this council can approach for advice.

4. For the next executive meeting: the executive needs more information about the NSW congress, in particular dates and duration. The organisers will be encouraged to lengthen the meeting to 3 days.

5. Possible working groups within the ASL: the following groups were identified - wetlands, taxonomy (through the workshops held in Albury), long-term research sites, biodiversity. The executive will investigate these further.

6. Spending by the treasurer was approved.

THE ROTTNEST EXPERIENCE

THE DOOR PRIZE REPORT

An annotated, edited version of the Door Prize Award presentation at the 33rd ASL Annual Congress held at Rottnest Island, February 1994 by T.J. Doeg.

For new or recent members of the Society, and those who are attending a Congress for the first time ... and welcome to you all ... along with the Jolly Award and the student prizes, the Door Prize is one of a number of Awards offered by the ASL to its members. It is presented at the Annual Congress in recognition of the person or persons who, in the opinion of the Door Prize Collective (an anonymous and flexibly amorphous group of judges), have contributed the most "original and/or memorable contribution to the Congress above and beyond the call of the average attendee." While ostensibly a humorous and totally frivolous award, it should be noted that past winners of the prize have invariably had their career stimulated by the presentation. In the past, many winners have subsequently been promoted or obtained new employment at higher pay, often within the 12 months after the presentation. Hence, in the past, efforts to win the Door Prize have resulted in many entertaining Congresses.

Nominations for the award are made under a series of flexible categories (i.e. they are made up on the spot), and generally competition is fierce. Unfortunately, at the 1992 Congress in Tasmania, the impact of the recession, budget cutbacks and wholesale staff reductions (termed "restructuring" or "re-sizing" by the economic rationalists of the time) meant that attendees at that Congress seemed to be more intent on remaining serious, with the result that no Prize could be offered for that year. This was much cause for lament, and resulted in a great degree of soul searching by ASL members, with the result that an award was made the following year to anyone involved in the beach games at the Caloola Congress.

This years Congress was therefore a litmus test, whether the return of the Prize the previous year was a reaction to the Tasmanian disappointment, or a real change of post-recession heart among ASL members to the good old free-wheeling activities of the past. It is with great pleasure that I announce here that the recession is finally over, as suggested by the Door Prize Indicator (defined as the number of nominations per category divided by the number of categories multiplied by the number of Congress attendees divided by the number of bottles of wine consumed at the annual dinner). Put more simply, the Door Prize is back in town.

This years nominations were keenly sought. The nominees were:

- In the "Kodak Nomination For Services To Audio-Visual Aids", many rather feeble attempts were made using the common ploys of putting slides in upside down, pretending not to know which button was forward or back on the projector, standing in front of the overhead projector and the like. However, the clear winner was Sam Wade's magical trained jumping slide which sprang at random from the projector, clearing a personal best of 1.7 m off the ground.

- The "Colours of Beneton" nomination was keenly sought, with the usual assortment of carefully coloured text slides. Stand out attempts were Paul Brown's red and yellow overhead plastics and Fran Sheldon's plethora of different coloured dots and triangles. But the final nomination went to Keith "Weasels Rip My Flesh by Frank Zappa" Ferdinands with psychedelic bar graphs of many colours - possibly a boast that Melbourne Water still has a lot of money to spend on colour printers and photocopiers (is that why our water bill went up this year?).

- The "LSD for Ever" nomination was clearly won by Ivor Growns T-shirt, looking like the result of an accident between Timothy Leary's brain scan and the entire Iron Butterfly In-A-Gadda-Da-Vida touring bus. I heartily supported this nomination as I had to look at the shirt during my entire talk held at 8:30 on the morning after the annual dinner. Special mention to Leon Barmuta's shirt at the annual dinner.

- The annual "Get Paul Humphrey" nomination (erected in 1993 due to Paul's scurrilous attack on the then editors of the ASL newsletter for their innovative and colourful covers) goes to Paul Humphrey for giving us two new statistical terms - "Faithful" used for data which give you the answer you were looking for and "Fickle" for data that don't.

- The "Alan Jones in London" nomination goes to those individuals seen playing somewhat suggestively on the mooring buoys off the beach near the Govenor's Circle. You know who you are, and you know what you were doing.

- A special "FX" nomination to the plank of floorboard in room 2 which invariably screamed as the talker approached the overhead projector, drowning out almost all the key points that were made in that room.

While all were worthy nominees, there can be only one winner of the Door Prize. And, for 1994, the winner was nominated in the "You Know You Are Going to Have a Bad Day When ..." category. After earnestly discussing the finer points of limnology and ecological theory late into the night after the annual dinner and wanting to secure a position close to the front for the following morning's session, our winner decided the place to sleep was on the lawn outside Room 1. Camping down in his sleeping bag, the winner slept soundly, lulled to sleep by the gentle sound of quokkas doing ... well, whatever it is that quokkas do during the night ... and far from the madding crowd of snorers who populated his bunkhouse. Imagine the bliss when awoken very early in the morning by the sound an feel of gentle rain ... wait a minute ... that's not rain. Opening one eye, it was immediately irrigated by the flood from the sprinkler head located 10-12 cm from our winners face (pssst, they always water the lawns early in the morning). Well, guess that's not too bad ... saves having a shower today ... what's that? ... where does the water come from? Like Western Australia, Rottnest Island is a very dry place and fresh drinking water is at a premium. Not for them the profligate use of pure water for watering lawns that characterises that Eastern State mentality. Reduce, recycle and reuse is the catchword. Recycling and reusing treated sewage is popular for lawns on Rottnest Island.

So congratulations to Rob Doupé, of Edith Cowan University, Perth, the winner of the 1994 Door Prize, and good luck in your future career, which is now certain to blossom (well ... it's been fertilised).

Jottings from the back of the bus

Report of post-ASL field trip to South West Western Australia

- delicious bush style pot roasted lamb prepared by Rudi Horwitz for dinner on our arrival
- introduction to the famous WA marron being cultured in the Horwitz dam; John Marshall's disappointment at none being available to eat almost being cured by a visit to the caves at Yellingup? where certain city slicker cappuccino aficionados scurried through the caves in time to get a hit before the bus left, while Steve tucked into a devonshire tea
- Patricia's (known to our Irish visitors as Padraigin) wonderful damper, laced with beer, onions and garlic
- Paddy's determination to sample all the delicacies Australia has to offer, including chiko rolls; when farewelled at the airport he was still alive, but we don't expect to see him at the next SIL
- Mark's colloquialisms eg" I'm so hungry I could eat the *** out of a low flying duck", were most appreciated by our overseas visitors, and no doubt filed for future use
- Darren's expert driving, he left no one behind anywhere and managed to get all of Monica's many bottles of wine safely to the airport
- Gillian's 'out of Africa' pith helmet
- Anne winning the prize for guessing the salinity of the Blackwood River; Anne also 'won' a glass of extra special port at the "Berry Farm" winery, we're not sure why???
- Declan and Paddy fishing patiently through trays and trays of organic matter looking for the elusive chironomids
- Freddy beguiling us with her Irish accent and stories about Ireland; yes Freddy, we will all be coming to visit you after SIL 1998
- June's stories of her engagements, which rivalled those of the Bussell women from Ellensbrook House
- visits to wetlands and rivers, liberally sprinkled with sojourns at wineries and swims; WA's great beaches may be responsible for some limnos considering defecting to marine science; we think John (Pablo with the strange hat) might still be surfing somewhere down in the south west
- Pierre's enthusiasm for and knowledge of the region-full mullet award for the best tour guide.

Participants are looking forward to the Sydney conference, hoping that there will be a field trip to the wetlands and rivers of the Hunter District, not to mention the wineries.

PER

Padraigin's Damper

1 kg self raising flour
2 small cans of beer
1 large onion sliced thinly
salt and pepper

Mix all ingredients to scone-like dough. Place in well oiled camp oven or baking dish or wrap in foil. Cook in pit covered with coals for about 45 minutes. Delicious with butter.

The Stream Workshop

One of the many highlights of the recent ASL conference on Rottnest Island, apart from John Hawking's romantic rendezvous with quokkas and Rob's tricks with the door-prize, was of course, the Stream Workshop. After initial introductions, we focussed on the impact of forestry practises on streams. There was general agreement that the major problem was sedimentation and that this impact could be alleviated by appropriate buffer strips and care in road construction. Seemingly, most silt entering streams during forestry activities is via poorly designed roads and this could be a useful area for biologists and engineers to examine in more detail.

Naturally, different states have different policies regarding buffer strips and their widths, but there was general recognition of their importance in minimising impacts of forestry. Tim Doeg described a broad "equation" incorporating factors such as stream order, gradient, litter cover, etc. that would help foresters plan the width of buffer strips but the workshop identified the lack of experimental studies in Australia to test existing or proposed buffer strips. There are many drawbacks to such an experimental approach (difficulty of finding paired sites, adequately assessing natural variation, need for multiple-point BACI designs, etc. but we should start trying to formulate a reliable method for recommending adequate protection for catchments that are to be logged. Thus far, most studies have been rather *post hoc* and entailed descriptive surveys of changes attributed to forestry practices with little or no pre-impact data.

We concluded with some discussion of remedial actions and the importance of involving local communities in rehabilitation and planting efforts. It was also pointed out that there is little work done on streams in completely cleared catchments, perhaps because it is assumed that these systems are "irretrievable". Overall, the discussion generated a wealth of ideas for further studies and a raging thirst that was satiated shortly afterwards. The organisers of the conference should be commended on the excellent venue and the relaxed and pleasurable atmosphere that pervaded the whole conference - thankyou!

The Modelling Workshop

Ian Webster and Brad Sherman (Environmental Mechanics, CSIRO)

The following account derives from the recollections and fabrications of Brad Sherman and myself of the major discussion of the workshop. This account of events is certainly inaccurate and may offend some participants.

We commenced proceedings by filling the refrigerator with Toohey's Reds. Eastern bias notwithstanding, Toohey's was judged to be a far superior drop to the local Matilda Bay Bitter. Matilda Bay Bitter has a handsomely styled can, but that is about all that can be said for it.

At the beginning of our workshop, I recall having a bit of a rave about what models were and what they were used for. In my view, models represent our understanding of the way the world is screwed together. Models can take many different forms. They can be a concept which is expressed only in words. They can be physical models. They can be empirical relationships between a set of environmental variables. They can be a mathematical expression such as a differential equation. Often models are comprised of many sub-models each of which expresses the relationship between components of the overall system we are trying to represent. Nowadays, computer programs are commonly used to execute models which can be represented in a mathematical or logical framework [Does that imply mathematics isn't logical?- *Eds*].

We can distinguish two types of model, namely the diagnostic model and the predictive model. We might construct in our minds or as a computer code a model of how a piece of Nature ought to work. Comparison of how Nature does work with model predictions allows us to test or diagnose the hypotheses which comprise our model. Carefully constructed diagnostic models allow for the design of efficient experiments and for effective hypothesis testing. We believe that such diagnostic models are implicit in many investigations in science, often without the investigator being fully aware of their presence.

Predictive models are used to predict a future state of a piece of Universe from its present state. We may wish to predict the impact on the environment of a particular activity for example. This sort of model interests the resource management agencies who are more concerned with what will happen than why it will happen. We would maintain though, that to understand what will happen it is first necessary to understand how a system works. Ultimately, we would suggest that the development of a predictive capability is the justification of much if not most limnological research.

Some discussion at the workshop focussed on the misuse of computer models. Because they produce seemingly objective predictions from a series of complex computer operations, the predictions of computer models may be attributed with a credibility which may not be warranted. All models have limitations arising from the assumptions used in their construction. In general, models are tested over only limited ranges of environmental variables. Interpolative predictions are expected to have greater validity than extrapolative predictions. Unfortunately, the predictions of the latter sort are likely to be of the greater utility. It was felt that the author of a model has a responsibility to

ensure that the user is made fully aware of a model's limitations; the user must acknowledge the model's limitations in its application.

The implementation of numerical models may include some traps for the unwary. Models which try to include a multitude of processes may produce chaotic predictions which are not in accord with the reality the models are trying to represent. The inclusion of more processes in a model may not lead to a better predictive capability. Of course, one must ensure that the most important processes are represented. Often models consist of sub-models each operating at different time and space scales. For example, the Port Phillip Bay Study requires the construction of a hierarchy of sub-models; physical, chemical, and biological, each operating at differing spatial and temporal scales. Matching the output of one sub-model to the input of another in an efficient and effective manner is no mean feat.

At the stage of the evening, the workshop ran out of drinkable beer and so the meeting was terminated.

Wetlands Workshop: Artificial maintenance of water regimes

A summary of the workshop by Shirley Balla

Artificial maintenance of wetland water regimes falls into two categories: adding water and removing water. In W A the Water Authority adds water to Jandabup Lake and Nowergup Lake on the Gnangara Mound to compensate for groundwater abstraction nearby. Water is pumped from the superficial or confined aquifer into these lakes to meet EPA statutory water level requirements. The addition of water is highly successful, although recent research indicates that adding water in autumn to maintain the presence of a shallow puddle of water may not achieve the results the EPA hoped for. At both wetlands the purpose of adding water to the wetlands is principally to maintain an open water habitat for migratory wading birds in the face of an encroaching sedge bed. Research by Ray Froend and others has shown that it is the spring maximum water levels combined with the duration of flooding that halts the inward march of the vegetation, and the low water level in autumn is less relevant. In the face of this new information it is expected that the EPA will revise their statutory water levels and the Water Authority will top up the water level in spring rather than maintain a shallow pool in autumn. Additional information about the adaptations of the aquatic invertebrates to seasonal drying has also contributed to the review of the current system.

At Bibra Lake the Water Authority pumps water out of the lake which is overfilled due to drainage and urban development in the catchment. To date, the success of this operation has been limited, with difficulties in getting the water levels down to the recommended maximum level.

Other areas in Australia where water level manipulations are attempted include the Macquarie Marshes, where an extensive network of drains and channels is used to regulate the amount of water reaching various parts of the system. One fault with the system is that the upper part is regularly drier than it would be naturally and the lower part is wetter, and overall the system is more homogeneous.

Water allocations for the environment are a significant issue along the River Murray, with arguments about who is going to pay for the water. Calculations of the flooding levels reached by particular quantities of water are possible, especially in areas like Chowilla. One of the major advantages with sites on the lower river is the advanced warning of a coming flood to allow a couple of weeks of planning. River regulation has resulted in a reduction in the number of smaller floods, while the incidence of large floods cannot be managed due to their sheer magnitude. Options for topping up smaller floods with release of water upstream are being considered. Research by Jane Roberts and others indicates that the impact on the floodplain tree communities of floods is complicated by complex groundwater relationships. Both flooding and groundwater may be important in the flowering and recruitment process.

Overall there appears to be some opportunities for manipulating water regimes on a small scale, but extreme events (drought and flood) are beyond the abilities of managers to counteract. Several people pointed out that it is the extreme events that tend to shape and change wetlands (lotic and lentic). One of the disadvantages of managing the smaller fluctuations of water levels in wetlands is the creation of a more uniform environment. This has implications for biodiversity since more uniform environments can be less diverse.

Another consequence of the ability to manage water levels is the pressure to maximise biodiversity in particular wetlands. This can result in the loss of less diverse wetland communities which are unique for their species composition rather than their species richness. The natural consequence of attempting to conserve these different wetlands communities is to manage wetlands in their geographical setting as a mosaic of types. This allows water levels in individual wetlands to be dynamic, while the overall proportion of wetland types within a region can remain similar. Exactly how this is achieved is unclear, especially when one of the most influential factors on water levels is climate. How is it possible to keep the proportions of lakes, swamps and damplands the same when the rainfall increases or decreases over the whole region?

For the moment, water regime management seems to be simplistic, reflecting our lack of knowledge of the complex communities and their requirements. The desire to manage wetlands better is prompting the investment of considerable research effort in this area and our knowledge is likely to increase rapidly in the next few years.

FOR SALE

Second World Congress of Herpetology T-shirts and Windcheaters

4 colours with a chameleon on front,
100% cotton
Made in Australia

$20 windcheater - all sizes to 22
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(plus $5 postage)

contact Dr Margaret Davies, Department of Zoology , University of Adelaide
Phone (08) 303 5851 or Fax (08) 303 4364.

cheques payable to Second World Congress of Herpetology.

CONFERENCE CAPERS

Forthcoming Workshops and Conferences

- The Australian Centre for Water Quality Research will convene a one day seminar on Toxic Cyanobacteria - A Global Perspective on Monday 28 March at Glenelg, South Australia. Further information from Mr Keith Hayes, ACWQR phone (08) 259 0223.

- A national seminar on Quality in Postgraduate Research: Making it Happen, to encourage best practice in relation to postgraduate teaching and supervision is being convened on 7 - 8 April 1994 at Glenelg, SA. The seminar is being organised by the University of Adelaide, in conjunction with the University of South Australia and the Flinders University of South Australia.

- The second Australian Conference on Biological Nutrient Removal from Wastewater (BNR2) will be held in Albury from 4 - 6 October 1994. The conference is convened by AWWA and supported by the International Association of Water Quality (IAWQ), see David or Rhonda for further details.

- Sustaining the Ecological Integrity of Large Floodplain Rivers: Application of Ecological Knowledge to River Management, 12 - 15 July 1994, La Crosse, Wisconsin, USA.

- Abstracts are still being accepted for the 4th International Conference on Wetland Systems for Water Pollution Control to be held in Guangzhou, China for 6 - 10 November 1994. David Mitchell (MDFRC) is a member of the International Program Committee and can provide further information.

  David Mitchell is also a member of the Program Committee for an IAWQ-SIL

- Specialised Conference on Selection mechanisms controlling biomass distribution between cyanobacteria, phytoplankton and macrophyte species to be held in Noordwijkerhout, The Netherlands, from 11 - 15 December 1994. Abstracts are required by 15 April.

- Fourth International Symposium on Off-Flavours in the Aquatic Environment is being organised on behalf of the IAWQ Specialist Group on Tastes and Odours in Water. Symposium will be held 2 - 7 October 1994 at the Ramada Grand Hotel, Adelaide, South Australia. Further information can be obtained from Mr Keith Hayes, Australian Centre for Water Quality Research, Private Mail Bag, Salisbury, SA 5108. Phone (08) 259 0223 or Fax (08) 259 0228.

ANNOUNCEMENTS

Invertebrate Identification Guides

Since 1989, the Murray Darling Freshwater Research Centre has annually hosted a taxonomic workshop to promote the publication and use of working keys to freshwater invertebrates. The Cooperative Research Centre for Freshwater Ecology is supporting the publication of keys emanating from the workshops as Identification Guides. The first two guides have been formally published and are available for purchase, along with the Chironomid notes, from the last workshop.

Guide No. 1. A preliminary guide to the identification of the microdrile Oligochaeta of Australian inland waters, by A.M. Pinder and R.O. Brinkhurst (1994), pp. 137, cost including postage $25.00.

Guide No. 2. A preliminary guide to keys and zoological information to identify invertebrates from Australian freshwaters, by J.H. Hawking (1994), pp. 36, cost including postage $15.00.

Workshop Notes. The immature stages of the Australian Chironomidae, I. Keys, II. Figures, by P.S. Cranston, (1994), pp. 338, cost including postage $35.00.

The guides and workshop notes are available from: John Hawking, The Murray-Darling Freshwater Research Centre, P.O. 921, Albury NSW 2640.

The Tyler Prize

1993 TYLER PRIZE is Awarded for Developing an Ecosystem Model to Detect the Environmental Impacts of Humanity

F. Herbert Bormann and Gene E. Likens are being honoured with the 1993 Tyler Prize for environmental Achievement for bringing fundamental order to the science of ecology and for creating the premier model for ecosystem studies in the world. They conceived the idea of utilising a small watershed for controlled experiments of whole forest ecosystem: and they developed and managed the Hubbard Brook Ecosystem Study, which is celebrating its 30th anniversary this year. In bestowingt his honour on Drs Bormann and Likens, the Tyler Prize Executive Committee recognises their brilliant record of innovative scientific leadership that has stretched the boundaries of environmental knowledge through startling discoveries which changed American law and international policy.

THE TYLER PRIZE PROFILE:

The Tyler Prize for Environmental Achievement was established in 1973 by John and Alice Tyler of Los Angeles. They hoped that an international award would inspire people of all nations to become involved in preserving the environment.

1993 marked the 20th anniversary of the Tyler Prize. Since its inception, the $150 000 prize has been America's foremost environmental science and leadership award and is now recognised as a premier world prize.

The prize had been presented annually in Los Angeles; at the White House in Washington, D.C.; and in Nairobi Kenya. In 1993, on December 3, the Tyler Prize was presented in Los Angeles, marking the thirty-second and thirty-third awards.

The prize is administered under the auspices of the University of Southern California. Winners are selected by the Tyler Prize Executive Committee, which consists of scientists and corporate leaders.

IUCN

The International Commission on Zoological Nomenclature proposes to publish a new edition of the Code, taking into account the large number of possible amendments which have been received. It is planned that the Fourth Edition will be published during 1995 and that on 1 January 1996 its provisions will supersede those in the current (1985) edition.

The Commission's Editorial Committee met in Hamburg from 12-16 October 1993 to prepare a discussion draft for the new edition of the Code. Copies of this draft will be sent without charge to all subscribers to the Bulletin of Zoological Nomen-clature_ and to members of the American and European Associations for Zoological Nomenclature. Any other insti-tution or individual may order a copy from the Executive Secretary, I.C.Z.M., c/o The Natural History Museum, Cromwell Road, London SW7 5BD. Bank charges on currency exchange make it uneconomic to charge the cost of printing and postage (#3 or US$5) except for payment in sterling or US dollars. The draft will therefore be sent free of charge, but those able to pay in sterling or US dollars are asked to enclose a cheque for #3 or US$5 to cover the cost.

Before completing the definitive text of the Fourth Edition, the Commission will (in accordance with Article 16 of its Con-stitution) carefully consider all comments and suggestions on the draft. Zoologists and others are asked to send these to the Executive Secretary of the Commission at the above address as soon as convenient, and in any event not later than February 1995.

The Australia Prize

Australia Prize Awarded to Professor Gene Likens

Congratulations to Professor Gene Likens who has been awarded the 1994 Australia Prize, a $250,000 award that aims to increase public awareness of science. He was nominated by Professor Bill Williams from the University of Adelaide. The nominated area of the award in 1994 was Sustainable Land Management. Prof. Likens has made substantial contributions to this area through his research into hydrology, water control, sustainable agricultural projects and catchment management. He is a noted ecosystem ecologist and limnologist who in 1963 (with Professor F.H. Bormann and Dr R.S. Pierce) pioneered long term research on the streams and Mirror Lake at the Hubbard Brook Experimental Forest, providing evidence for the significance regarding acid rain and dry deposition of sulphur. Acid rain has now been recognised as one of the top six threats to environments in the United States. These long term studies, including experimental manipulation at the scale of catchments, are a benchmark in limnological research. Much of this work has had a holistic approach integrating atmospheric, catchment and wetland processes, an aim seen as important by many freshwater ecologists but rarely achieved. One key discovery was that nitrate levels rose after clearing forest from a watershed.

NEW BROOM FOR FASTS

From an article by Peter Pockley (*Search* Vol. 25, Jan/Feb 1994)

The new President of the Federation of Australian Scientific and Technologies Societies (FASTS), Professor Graham Johnston, is planning a shift in emphasis from a largely reactive to a predominantly proactive organisation. The change is significant as FASTS emerges from a year of mixed success in its lobbying in Canberra following a public spat with the former Minister for Science, Ross Free.

Johnston succeeds Dr Ditta Bartels, a science policy expert at the University of NSW, on completion of her 2 year term. A Professor of Pharmacology at the University of Sydney with an extensive record of achievement in brain chemistry, Johnston recently handed over the Presidency of the Royal Australian Chemical Institute. His mission for Australian science, in a nutshell, is 'to help make it part of the real world and to establish a broader base for the science and technology agenda'.

In his first interview since attaining the Presidency of FASTS, Johnston said he has been actively seeking experience beyond the confines of the research laboratory and is now keen to apply the lessons from his contacts with business and government to his work as leader of one of the most influential bodies in Australian science.

Johnston's tow main 'extracurricular' activities are the Administrative Appeals Tribunal, where he serves as a specialist member and the R&D syndicate Synrad Pharmaceuticals, which is commercialising viral research techniques developed by CSIRO with AMRAD Corporation Ltd and Macquarie Bank.

Johnston comes into prominence in national science affairs at the end of the tumultuous first year of Senator Chris Schacht in the Science portfolio. He is clearly keen to support Schacht in his attempts to re-build relationships with the scientific community, which were put on edge in 1992.

'FASTS values a good interaction with Senator Schacht. He shows a lot of promise as a minister. While he made a major mistake in not consulting the scientific community over his restructuring plans last year, he did galvanise scientists like never before and he reacted well to criticism. The Minister did the scientific community a favour by bringing other, senior ministers into the discussion of science policy'.

BIOLOGY SCIENCE OLYMPIADS
BIOLOGY STUDENTS NEED YOUR HELP!

The Australian Biology Olympiad (ABO) program is managed by the Australian Science Olympiads and funded jointly by the Australian Federal Government and private industry. The ABO provides students with a program of accelerated learning in biology and aims to stimulate an active interest in science, both theoretical and practical; to promote and reward excellence in scientific endeavour; and to have a team of four members represent Australia at the International Biology Olympiad competition.

Prospective students sit for the ABO Qualifying Examination in October, they would normally be in Year 11 but exceptional Year 10 students are considered. The Qualifying Examination selects approximately twenty students to attend Biology Summer Training School held at the University of Canberra in January.

The two week residential Summer Training School is staffed by professional scientists from Australian tertiary institutions and team members from earlier Olympiads and provides students with intensive tuition in all aspects of biology at an undergraduate level. The final examination for team selection is held in March following the Summer Training School. The ABO team for that year will then attend an Easter Training School, which provides the final preparation before the team leaves for further overseas study and the International Biology Olympiad competition.

The syllabus typically includes: 'The Cell', 'Biological Molecules', 'Genetics', 'Ecology', 'Biological Diversity and Evolution', 'Plants', 'Animals', 'Industrial Biology and Biotechnology'. In 1993, Australia competed for the second time in the Biology Science Olympiads and did remarkably well, coming second overall to China.

1. We want to establish the Biology Olympiad Bursary, so that each team member will receive some financial support and recognition of their success in being chosen as part of the team of four. Other Science Olympiad contestants are supported by relevant Societies or Institutes and each tem member receives a bursary of $500. We hope the biologists will be able to match that figure and have asked Societies, Institutions and companies to help. Please request your institution or company to participate. Cheques should be made payable to the Biology Olympiads Bursary, C/- Dr G. Flannery, Treasurer, Victorian Cell Biology Society, Department of Genetics, La Trobe University, Bundoora 3083 VIC.

2. We plan to establish a National Register of Biologists who are able to help with advice to teachers and team members and also in coaching team members. Persons on the National Register may be asked for advice by teachers at the school level, or to attend the training camp run by DEET in January, or for final coaching of the team before the Olympiad in the middle of the year. The Victorian Cell Biology Society will run the Bursary and National Register for 1994 and 1995. After that it will be run for two years by another society so that eventually every Australia biological society will participate. In 1996, 1997 it will be run by the Australia and New Zealand Society for Cell Biology and thence by delegation to the next Society.

3. There is a third area where your support would be of value. Despite comprehensive press releases, no member of the press attended the farewell and press coverage of the success of the team was very slight. Biologists should put this on their agenda for attention at every opportunity. It is vital that we change this apathy towards scientific endeavour and achievements in the press and electronic media.

Please act immediately so the 1994-5 teams receive the support they deserve.

Dr Lynne Selwood
President, Victorian Cell Biology Society.

National Register of Biologists

If you are able to help please fill in the form below and send to Dr Lynne Selwood, President, Victorian Cell Biology Society, Zoology Dept. La Trobe University, Bundoora Victoria 3083 Australia. Phone: (03) 479 2239. Fax: (03) 479 1551. Email: zools@zoom.latrobe.edu.au

We need to know your

Name Address Phone FAX Area of Expertise

ECOLOGY INSTITUTE PRIZES 1994

Every year a jury composed of members of the international Ecology Institute (ECI) selects prize winners among marine, terrestrial or limnetic ecologists. **In 1994, prize winners will be selected in the field of limnetic ecology.**

The ECI Prize honours a research ecologist distinguished by sustained, excellent achievements. The winner is requested to author a 200 to 300 printed-page book, to be published in the series 'Excellence in Ecology', which gives the author a chance to express personal views on important ecological issues, to interpret current scientific knowledge on the basis of their own experience and insight, and to tell us what, in their opinion, should be done in the future. Information regarding nominations should be directed to the Chairperson of the ECI Jury, Professor W.D. Williams, Department of Zoology, University of Adelaide, South Australia 5005. Phone (08) 303 5847 or Fax (08) 303 4364. Applications close 30th September 1994.

CONFERENCE REPORTS

12th International Symposium - Chironomidae - Canberra 22-26 January, 1994

The Conference was held at the Division of Entomology, CSIRO Canberra and attracted 50 registered delegates, including 12 Australians, and representatives of most inhabited parts of the world. Because of its size and specific nature the Conference consisted entirely of single stream papers and covered a large range of scientific disciplines connected only by the fact that they related to midges. Papers dealing with such topics as molecular genetics, behaviour and physiology, traditional taxonomy, nuisance insect control, and biological monitoring, not to mention natural history, all presented to virtually the same audience. This resulted in three things. Firstly exposure to aspects of science not always considered, and secondly because the presenters made a conscious effort to make their work understandable, they elicited discussion and feedback from within disciplines they would not otherwise contact. Thirdly, the efforts to present and hear papers in a group representing widely diverse expertise resulted in an atmosphere of sympathy and cooperation which made the whole conference especially enjoyable.

I enjoyed the conference from a personal point of view, not only for the chance to interact with overseas colleagues (and to put faces to some of the names which appear frequently in the literature) but because it was consciously low-key and aimed only at furthering the understanding of those mysterious little buggers which so many of us in the past have accidentally washed down the sink. Finally, as a personal note, I couldn't help but notice the change in what it means to be a biologist working in Australia, which has taken place over the last five to ten years. It seemed to me that the old "taxonomic cringe" had disappeared and that our collective knowledge of our fauna, together with our developed and developing use and understanding of multivariate techniques, amongst other things, allows us to contribute to international science on at least an equal footing with others. I hope that support for research in both areas of limnology continues to grow and bear fruit.

Dr Terry Hillman

Summer School in Freshwater Microbiota

The summer school in freshwater microbiota was run from January 17-21 at the Albury-Wodonga campus of La Trobe University in cooperation with Deakin University Warrnambool. Dr Roger Croome and Professor Peter Tyler organised the course and this was a trial run but they hope to have it accredited through La Trobe and Deakin in the future. The participants came from a wide range of backgrounds including Honours and Postgraduate students, research and technical staff from a range of government departments and universities from Tasmania to the Northern Territory.

The major focus of the course was a set of entertaining lectures and practicals on the algae by Peter Tyler. He started with a discussion of the phylogeny and origins of the algae, from Aristotle to Haeckel, on to Margulis and then gave his tips on future directions. We were given a thorough grounding in microscopy, including bright and

dark field, phase contrast, Nomarski and fluorescence techniques. He then discussed the origins, pigments, ultrastructure, reproduction and ecology of all the major freshwater algal groups.

Practicals consisted of examination and identification of fresh samples, demonstrations of microscope use and the different types of microscopy. Video display of microscope techniques allowed us all to experience the wonder of Peter Tyler's Carl Zeiss microscope. The staff student ratio throughout the practical sessions was excellent but good keys were in short supply in the lab.

Dr Russel Sheil switched the topic to animals with a discussion and some videos about the private lives of rotifers. Professor Johanna Laybourne-Parry gave an excellent introduction to the protozoan and Dr Paul Boon went from the scale of bacteria to global warming in his talk about decomposition and methanogenesis by wetland bacteria. The scientific and political aspects of Lake Mokoan's Blue Green problem were discussed by Dr Roger Croome who also gave a fascinating talk on the biological and chemical stratification of the Gordon Lakes, a series of meromictic lakes on which he did his Ph.D. Dr Ling Hau U took us to Antarctica with a spectacular slide presentation and a talk on snow algae. Special thanks to Trude Hoetzel for collecting the live material and providing advice in the lab.

The atmosphere throughout the week was friendly and relaxed and all the staff involved were very approachable. If you are interested be sure to give Roger Croome a call, the course is well worth the experience.

Sam Wade and Adrienne Burns
Zoology Dept. University of Adelaide

POSTCARDS FROM THE SEDGE

In early December Fran Sheldon and I limped back from a torrid November in Goyder's Lagoon, on the lower Diamantina. We did the aquatic part of a comprehensive biological survey, funded by the Heritage Commission, of the previously unstudied wetland. It was initially difficult to give a coherent account of the experience, partly because of the effects of the privations of the trip (a month of temperatures in the 40's, with only a deep coolibah-lined river to bathe in, and only ice-cold beers from the car fridge to drink). Apart from the physical ordeal, our most vivid memories include following a 7-foot king brown snake by torch light as it wound its way among our tents and swags and mused on which bed to choose, or going to a pitfall site after a storm and finding new lakes on the gibber, all the trees stripped of leaves by hail and 30 Elliott traps whisked up to heaven.

However, we were very impressed with this monster wetland. When you stand in the middle of the lagoon, on the "inside track", and there is nothing from horizon to horizon but lignum and the cracking clays are carpeted with dried Marsilea, it seems incredible that a wetland of this size - some 3000 sq. km - has virtually not existed in limnological consciousness until recently.

The system is very different from the Cooper floodplain. In South Australia, the Cooper floods into a 20,000 sq. km maze of lakes in the Strezlecki dune system which slow the flood front and retain waters for years. In Goyder's Lagoon, once floods overtop the deeply incised river channel, they spread uniformly over a level plain, and retention time on this plain appears to be only a few months. Perhaps significantly, three of the most ubiquitous vertebrate taxa in the lower Cooper - *Emydura krefftii* (tortoise) and *Retropinna semoni* (Australian smelt), *Hypseleotris klunzingeri* (Western carp-gudgeon), are absent from Goyder's Lagoon.

Despite the dry conditions, we were able to sample a variety of waterbodies from north to south over about 80 km. They differed markedly, probably because of varying flooding frequencies, retention times, and the effects of local torrential rain events. It should make an interesting story.

Jim Puckridge
Department of Zoology, University of Adelaide.

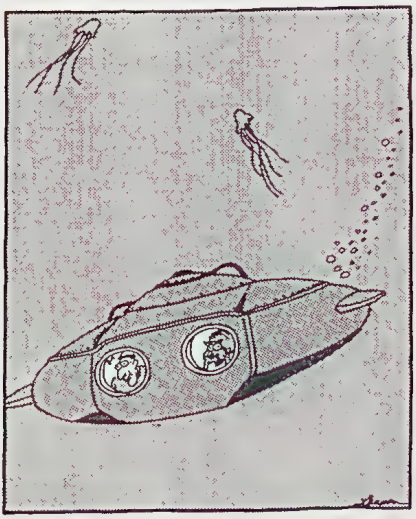
(if you have visited a wild and wonderful spot - or perhaps even a moderately boring spot - send us a Postcard -- *eds*)

Are Aquatic Organisms Well Known Enough for Protection?

Aquatic Organisms and Communities and the Endangered Species Act

The Endangered Species Protection Act 1992 provides a mechanism for listing vulnerable and endangered species, communities and the processes that threaten them. The 'Act' comes with an Endangered Species Advisory Committee - which has a five member Scientific Subcommittee appointed to represent the scientific community: One "expert" on "feathers and fur", one for vascular plants, one for invertebrates, one for marine organisms and yes, one for inland aquatic organisms and communities. As the representative with some expertise in inland aquatic things it is time that I raised your consciousness about what the act should do and what role aquatic ecologists and taxonomists should play in making sure the organisms we care about are not neglected. I am happy to talk further about issues related to endangered species and communities but as an introduction here is an extract out of the summary of the act.

Margaret Brock
Botany Dept. UNE



The living hell of Maurice, Jacques Cousteau's cat

Extract from: "*Endangered Species Protection Act 1992 - an outline*". Australian Nature Conservancy Agency

1 OBJECTIVES OF THE ENDANGERED SPECIES PROTECTION ACT 1992

The objectives of the ESP are to:

- promote the recovery of species and ecological communities that are endangered and vulnerable;
- prevent other species and ecological communities from becoming endangered;
- reduce conflict in land management through readily understood mechanisms relating to the conservation of species and ecological communities that are endangered or vulnerable.
- provide for public involvement in, and promote public understanding of, the conservation of such species and ecological communities.

The Act prescribes that its objectives will be met by:

- identifying and listing endangered and vulnerable species, endangered ecological communities and key threatening processes;
- preparing and implementing recovery plans (for listed species and ecological communities) and threat abatement plans (for listed key threatening processes);
- entering into voluntary conservation agreements (between the Commonwealth and persons having interests in Commonwealth areas);
- providing an option to apply conservation orders to prohibit, restrict or impose requirements on specified activities on or in Commonwealth areas or where Commonwealth environmental assessment procedures are in place;
- imposing obligations on persons (particularly Commonwealth agencies) arising from the listing of species, ecological communities and key threatening processes, or adoption of protective measures;
- conferring powers for the administration and enforcement of the Act; and
- establishing an Endangered Species Advisory Committee (ESAC) and Endangered Species Scientific Sub-committee (ESSS) to advise the Minister for Environment, Sport and Territories.

Complementary changes to the Environment Protection (Impact of Proposals) Act 1974 (the EPIP Act), specify the circumstances under which endangered species considerations trigger environment assessment procedures.

Areas directly affected:

The ESP Act directly protects endangered and vulnerable species and endangered ecological communities in Commonwealth areas. These areas include:

- land owned or leased (including land owned or leased in Norfolk Island) by the Commonwealth or a Commonwealth agency;
- land in external territories (except Norfolk Island) and the Jervis Bay Territory;
- the coastal sea (except those areas of seabed and water above the seabed vested in a State or the Northern Territory);
- the seabed of, and the waters above, the continental shelf of Australia;
- the Australian Fishing Zone; and
- any other area of land or sea that is declared a park or reserve under the National Parks and Wildlife Conservation Act 1975.

Areas which may be indirectly affected:

- any land or water identified in approved recovery plans as being critical to the survival of listed species or ecological communities. Commonwealth approvals, actions or decisions affecting such areas must not contravene an approved recovery plan;
- areas affected by Commonwealth actions, approvals or decisions that could threaten with extinction, or significantly impede the recovery of, a listed species or ecological community.

Agencies/persons directly affected:

- Commonwealth agencies that own or lease Commonwealth land or waters, and any person who owns, occupies, has management of, or the right to carry out commercial activities in a Commonwealth area.

2 Listing of Endangered and Vulnerable Animals and Plants, Endangered Ecological Communities and Key Threatening Processes

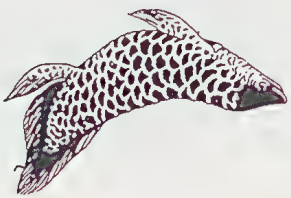
Species

Schedule 1 of the ESP Act contains lists of species considered endangered or vulnerable or that are presumed extinct. The lists are based on those agreed by the Australian and New Zealand Environment and Conservation Council (ANZECC) through its Networks on Endangered Fauna and Flora. Subspecies can be included on the lists and, in exceptional circumstances, distinct populations of species may be included where the Minister has determined that such populations will be considered as species for the purposes of the Act. Ecological communities

Schedule 2 lists endangered ecological communities. The criteria for determining ecological communities will be further defined following recommendations to be made to the Minister by the Endangered Species Scientific Subcommittee. At this stage no ecological communities have been listed.

Table 1: Numbers of endangered, vulnerable and presumed extinct species in Schedule 1 (at 30 April 1993).

	Endangered	Vulnerable	Extinct
Fish	7	6	0
Amphibian	7	2	0
Reptiles	6	15	0
Birds	25	25	20
Mammals	28	18	21
Plants	226	660	74
TOTAL	299	726	115



ASL VOLUNTEERS

The following people have volunteered to speak as experts on behalf of the ASL. This results from the call for such volunteers in the last newsletter.

Prof.W.D.Williams .....ecolgy of salt lakes
Dr K.F.Walker.....ecology of Murray-Darling basin
Dr P.Humphries.....fish habitats, instream flows
Dr J.John .....phytoplankton blooms
Dr P.Horwitz .....conservation of freshwater invertebrates
K.Hortle.....impact of mining or development in SE Asia on rivers
Dr G.P.Closs .....freshwater fish ecology and conservation
Dr P.S.Lake .....stream ecology and conservation of freshwater biota
Dr M.Finlayson .....wetland ecology, RAMSAR convention
J.Puckridge.....ecology of arid zone rivers and their fish
Dr N.Rea .....ecology of aquatic plants and wetlands
Dr T.Grant.....platypus ecology
Dr P.Boon.....bacteriological issues in freshwater
Dr A.Boulton.....ecology of intermittent and semi-arid zone streams;
Dr L.Townley .....groundwater interactions;

Further details can be obtained from the ASL Secretary.

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AUSTRALASIAN SOCIETY FOR DIATOM RESEARCH

There has been a resurgence of diatom research in recent years as once again the environment is under focus. Aquatic studies focusing on wetlands conservation have become part of the new awareness of our environment. Diatoms feature prominently in studies involving eutrophication, industrial pollution, increasing salinity, climatic changes and many other problems afflicting our water resources. Diatoms have been extensively used as indicators of environmental changes in different aspects of micro-palaeontology, stratiography, palaeoecology and palaeolimnology. Ease of culture has lead to considerable use of diatoms in physiological and biochemical studies.

Parallel with increasing diatom research, several diatom societies have emerged. In Europe, the Dutch-Nordist diatomist group, the British Diatomist Association, the French-speaking diatomist group, and the German-speaking diatomist society, have all been active with the annual meetings and publication of newsletters for some years now. Of course the American diatom society has been active for a number of years and attracts a large number of delegates to the annual conferences. With the founding of the International Society for Diatom Research in 1985, and the publication of the journal 'Diatom Research', opportunities have opened up for interaction among the various regional groups.

However, diatom researchers in the Australasian region have nor organized themselves as a group yet. Certainly this is no reflection on the spread and depth of research on diatoms going on in the various Universities, government institutions and agencies in the Australasian region. I believe it is time we get together, exchange ideas, sort out some of the taxonomic problems, concentrating on local diatoms through Newsletters and Annual Conferences. Though the Japanese society of diatomists has been active for some years now with its own journal, its members are keen to establish contact with diatom research workers in New Zealand and Australia.

I am writing to you soliciting your support for the founding of an *AUSTRALASIAN SOCIETY FOR DIATOM RESEARCH*. As in diatom societies in other parts of the world, our society could draw members from biologists, botanists, zoologists, geographers, palaeontologists, geologists, biochemists, microbiologists and amateur diatomists, and of course post-graduate students, waterways managers, electron microscopists, everyone who has an interest in diatoms, from Australia, New Zealand, Japan, China, Korea, Singapore, Malaysia, etc.

There has already been considerable interest shown by several from these countries.

I invite you to join the society by filling in the attached form and post it to me before March 30, 1994. It would greatly appreciate if you could forward a summary of your research activities and list of publications on any aspect of diatoms before the above date.

Please share this information with anyone you know who would be interested in joining the society.

Thanking you.

Yours sincerely

Dr Jacob John

AUSTRALASIAN SOCIETY FOR DIATOM RESEARCH

To: Dr Jacob John
School of Environmental Biology
Curtin University of Technology
GPO Box U1987
Perth WA 6001

I wish to join the AUSTRALASIAN SOCIETY FOR DIATOM RESEARCH and would like to receive the first Newsletter of the Society.

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